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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,332	06/26/2003	Larry Henry Steinhorst	064731.0346	7931

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EXAMINER	
AZEMAR, GUERSSY	
ART UNIT	**PAPER NUMBER**
2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/609,332	STEINHORST ET AL.	
	Examiner	Art Unit	
	Guerssy Azemar	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *06/26/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of this application exceeds 150 words.

Claim Rejections - 35 USC § 103

2. Claims 1, 4, 5, 7 – 9, 10, 12, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman et al. (US 20040179518) in view of Dasika et al. (US 7,016,378).

(1) with respect to claim 1:

As shown in figures 1, 2, 3, Bruckman et al. teaches a method for providing Communications service during an upgrade of an optical communications ring formed from a plurality of nodes, each node operable to transmit and receive a first frame having a number of first time slots equal to N, wherein N is an integer and the first time slots are occupied by data, the method comprising:

upgrading a first node in the optical communications ring by increasing a data

transmission rate of the first node to an increased rate, the first node coupled to a second node, the second node operable to transmit data at the data transmission rate (40, 42 in figure 2, 70, 72 in figure 4, page 3, paragraph 29);

at the increased rate, transmitting from the first to the second node at a number of second time slots equal to M, wherein M is an integer greater than N and the data occupies a number of the second time slots of the second frame equal to N (70, 72 in figure 4, page 5, paragraphs 73, 75).

providing at least one identifier to the second node, the at least one identifier identifying the occupied second time slots of the second frame (page 5, paragraph 69, "identifier sent from one ADM to its neighbor").

Receiving at the second node; and

Detecting, at the second node, the data in the identified second time slots of the second frame according to the at least one identifier (page 5, paragraph 69, "The ADM receiving the message checks...").

Although, Bruckman et al. teaches that the transmission and reception at the second node from the first one while continuing to communicate within the existing capabilities (see abstract), it does not teach data in a second frame and receiving the second frame at the second node;

Dasika et al. teaches data in a second frame and receiving the second frame at the second node (70, 72 in figure 7, column 6, lines 23 - 29).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to transmit the second frame from the first to the second node of Bruckman et al. because the transmission would have been faster.

(2) with respect to claim 4:

Bruckman et al. teaches the method, wherein M equal one hundred and ninety two and N equals forty-eight (page 5, paragraph 73, "OC-48 and OC-192").

(3) with respect to claim 5:

Bruckman et al. teaches all of the subject matter as described above except for the method, wherein the data transmission rate is approximately 2.5 gigabits per second and the increased rate is approximately 10 gigabits per second.

Bruckman does teach the method, wherein the second rate is four times the first rate (page 3, paragraph 28) and that the upgrade can be from an OC-48 to OC-192 (page 5, paragraph 73).

Dasika et al. does teach a method, wherein the OC-48 line rate is approximately 2.5 gigabits per second (column 3,lines 2, 3).

One skilled in the art would know that the line rate for the OC-192 is four times that of OC48, and that of course, results in approximately 10 gigabits per second for the line rate of the OC-192. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the values for the optical carriers as taught by Dasika et al. in the ring network of Bruckman et al. since it was known in the art that it would be more reliable.

(4) with respect to claim 7:

Bruckman et al. teaches the method, and further comprising:

setting a first data receipt rate of the upgraded first node to equal the data transmission rate of a non-upgraded node (page 2, paragraph 13);

setting a second data receipt rate of the second node to equal the increased rate of the first node (step 40 in figure 2, page 5, paragraph 75); and

However, Bruckman et al. does not teach receiving, at the upgraded first node, the first frame at the first data receipt rate; and

wherein receiving the second frame at the second node comprises receiving the second frame at the second data receipt rate.

Dasika et al. does teach receiving, at the upgraded first node, the first frame at the first data receipt rate; and (62 in figure 7)

wherein receiving the second frame at the second node comprises receiving the second frame at the second data receipt rate (72 in figure 7).

Dasika et al. does not teach upgrading a data rate from an OC-48 to an OC-192, however does teach a transmission and reception of a first and a second message. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to transmit and receive the first message of Dasika et al. from the first node to the second at the first rate and transmit and receive the second one at the increased rate because it would have made the transmission more flexible.

(5) with respect to claim 8:

Bruckman et al. teaches a method for providing communications service in a communications ring formed from a plurality of existing nodes each operable to

transmit, at an existing rate, a first frame having a number of occupied time slots equal to N occupied by data, wherein N is an integer, the method comprising (from 24a to 24b in figure 4):

increasing the existing rate of a node to a higher rate, the node operable to transmit a second frame at the higher rate, the second frame having a higher number of time slots than the first frame (page 3, paragraph 28);

occupying a number of the time slots of the second frame equal to N using data to be received by at least one of the existing nodes (page 2, paragraph 22, hardware capability to operate at the first rate);

providing at least one identifier to the at least one of the existing nodes, the identifier identifying the occupied time slots of the second frame; and (page 5, paragraph 69)

However, Bruckman et al. does not teach transmitting the second frame of data to the at least one of the existing nodes.

Dasika et al. does teach transmitting the second frame of data to the at least one of the existing nodes (70 in figure 7).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to transmit the second frame from the first to the second node of Bruckman et al. because the transmission would have benefited a great deal of flexibility.

(6) with respect to claim 9:

Bruckman et al. teaches all of the subject matter as described above except for the method further comprising:

receiving the second frame at the existing node; and detecting, at the existing node the data in the identified time slots of the second frame according to the at least one identifier.

Dasika et al. teaches the method further comprising:

receiving the second frame at the existing node; and detecting, at the existing node the data in the identified time slots of the second frame according to the at least one identifier (72, 74 in figure 7).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to receive the second frame from the first to the existing node of Bruckman et al. because the transmission would have been faster.

(7) with respect to claim 10:

Bruckman et al. teaches the method, wherein the second frame has a number of the time slots equal to M, wherein M is an integer, and further comprising:

upgrading all nodes by increasing the existing rate to the higher rate (42 in figure 2);

However, Bruckman et al. does not teach directing the at least one existing node to ignore the at least on identifier; and

transmitting another frame having a number of the time slots equal to M from an upgraded one of the existing nodes.

Dasika et al. does teach directing the at least one existing node to ignore the at least on identifier; and (column 5, lines 10 - 12)

transmitting another frame having a number of the time slots equal to M from an upgraded one of the existing nodes (70 in figure 7).

Although Dasika et al. transmit a frame, he does not specifically transmit one with M number of time slots. It transmits Bruckman et al.'s M number of time slots. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to transmit the frame as taught by Dasika et al. having a number of time slots as taught by Bruckman et al. because it would have made the transmission faster.

(8) with respect to claim 12:

Bruckman et al. teaches the method, wherein the higher number of time slots is equal to exactly one hundred and ninety two and N equals forty-eight (page 5, paragraph 73, "OC-48 and OC-192").

(9) with respect to claim 13:

Bruckman et al. teaches all of the subject matter as described above except for the method, wherein the data transmission rate is approximately 2.5 gigabits per second and the increased rate is approximately 10 gigabits per second.

Bruckman does teach the method, wherein the second rate is four times the first rate (page 3, paragraph 28) and that the upgrade can be from an OC-48 to OC-192 (page 5, paragraph 73).

Dasika et al. does teach a method, wherein the OC-48 line rate is approximately 2.5 gigabits per second (column 3,lines 2, 3).

One skilled in the art would know that the line rate for the OC-192 is four times that of OC48, and that of course, results in approximately 10 gigabits per second for the line rate of the OC-192. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the values for the optical carriers as taught by Dasika et al. in the ring network of Bruckman et al. since it was known in the art that it would produce a significant economic impact.

3. Claims 2, 6, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman et al. (20040179518) and Dasika et al. (7,016,378) as applied to claim 1 above, and further in view of Hattori (US 20040213236).

(1) with respect to claim 2:

Bruckman et al. and Dasika et al. teach all of the subject matter as described above. Dasika et al. further teaches directing the second node to ignore the at least one identifier (column 5, lines 10 - 12);

However, Bruckman et al. and Dasika et al. does not teach occupying, using data, all of a number o third time slots of a third frame and transmitting the third frame.

Hattori teaches occupying, using data, all of a number o third time slots of a third frame and transmitting the third frame (page 8, paragraph 124, figure 5, "transmission frame a3 (x)").

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the third frame as taught by Hattori because it would have made the utilization of a band in the transmission more effective.

(2) with respect to claim 6:

Bruckman et al. and Dasika et al. teach all of the subject matter as described above; Dasika et al. further teaches the method comprising no unoccupied time slots (column 5, lines 65 – 67, "automatically provisioned overhead bytes... to fill the 2.5 Gb/s rate); except for generating a third frame at the second node, the third frame having a number of occupied time slots equal to N occupied by the detected data.

Hattori teaches generating a third frame at the second node (page 8, paragraph124, "the third node reads actual data and transmit it to the fourth node", the examiner understands that the third node equivalent to the second node of the applicant's invention since the second node was ignored in the reference).

Hattori does not specifically teach a frame having a number of occupied slots equal to N, but Bruckman et al. and Dasika et al. do. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to generate a third frame as taught by Hattori to occupy time slots equal to N occupied by the detected data in the transmission of Bruckman et al. and Dasika et al. because it would have the transmission faster.

(3) with respect to claim 14:

Bruckman et al. and Dasika et al. teach all of the subject matter as described above except for the method further comprising:

Generating another frame at the existing node and transmitting the another frame to another one of the existing nodes at the existing rate.

However, Hattori teaches a third frame (see figure 5, the reference refers to the transmission of third frame).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to generate a third frame as taught by Hattori in the node of Bruckman, whose system has already been made to operate at both rates. It would be therefore more flexible.

4. Claims 3, 11, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman et al. (20040179518) and Dasika et al. (7,016,378) as applied to claim 1 above, and further in view of Krishnamoorthy et al. (US 6,625,165).

(1) with respect to claim 3:

Bruckman et al. and Dasika et al. teach all of the subject matter as described above, except for the method, wherein data comprises payload data and redundancy data, and wherein the payload data occupies a first group of the second time slot designated for payload data and the redundancy data occupies a second group of the second time slots designated for redundancy data.

Krishnamoorthy et al. teaches the method, wherein data comprises payload data and redundancy data, and wherein the payload data occupies a first group of the second time slots designated for payload data and the redundancy data occupies a second group of the second time slots designated for redundancy data (time slot 1 and time slot 2 in figure 3, column 4, lines 23 - 34).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate payload and redundancy data as taught by Krishnamoorthy et al. in the transmission of the frame of Bruckman et al. because it would have made the network more robust.

(2) with respect to claim 11:

Bruckman et al. and Dasika et al. teach all of the subject matter as described above, except for the method, wherein data comprises payload data and redundancy data, and wherein the payload data occupies a first group of the time slots designated for payload data and the redundancy data occupies a second group of the second time slots designated for redundancy data.

Krishnamoorthy et al. teaches the method, wherein data comprises payload data and redundancy data, and wherein the payload data occupies a first group of the second time slot designated for payload data and the redundancy data occupies a second group of the second time slots designated for redundancy data (time slot 1 and time slot 2 in figure 3, column 4, lines 23 - 34).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate payload and redundancy data as taught by Krishnamoorthy et al. in the transmission of the frame of Bruckman et al. because it would have made the network more robust.

(3) with respect to claim 15:

Bruckman et al. and Dasika et al. teach all of the subject matter as described above, except for the method, wherein the data is divided into a plurality of categories, and the higher number of time slots are divided into a plurality of sections each corresponding to a particular one of the categories, and wherein each category of data occupies only a corresponding section of the time slot.

Krishnamoorthy et al. teaches the method, wherein the data is divided into a plurality of categories, and the higher number of time slots are divided into a plurality of sections each corresponding to a particular one of the categories, and wherein each category of data occupies only a corresponding section of the time slot (time slot #1 and time slot #2 in figure 3, the different sections 315-1, 317-1 in time slot #1, and 315-2, 317-2 in time slot #2).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the different sections and categories as taught by Krishnamoorthy et al. in the transmission of Bruckman et al. because in doing so the network would be more robust.

5. Claims 16, 18, 23, 24, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman et al. (20040179518) in view of Doi (20050181831).

(1) with respect to claim 16:

As shown in figures 1, and 4, Bruckman et al. discloses a node for forming an optical communications ring that includes a plurality of existing nodes each operable to transmit, at an existing rate, a first frame having a number of occupied time slots equal to N occupied by data, wherein N is an integer.

However, Bruckman does not teach a bit transmission unit operable to transmit a second frame to an existing node of the optical communications ring at a rate that is higher than the existing rate, the second frame having a higher number of time slots than the first frame; and

a switch unit coupled to the bit transmission unit, the switch unit operable to generate a pattern of data that fills a number of the time slots of the second frame equal to N and to send the pattern of data to the bit transmission unit.

Doi teaches a bit transmission unit operable to transmit a second frame to an existing node of the optical communications ring at a rate that is higher than the existing rate, the second frame having a higher number of time slots than the first frame; and (TP1 in figure 1)

a switch unit coupled to the bit transmission unit, the switch unit operable to generate a pattern of data that fills a number of the time slots of the second frame equal to N and to send the pattern of data to the bit transmission unit (SW1 in figure 1).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the switching unit and the transmission unit as taught by Doi in the nodes of Bruckman et al. because it would have made the transmission faster.

(2) with respect to claims 18, and 26:

Bruckman et al. teaches the method, wherein the higher number of time slots is equal to exactly one hundred and ninety two and N equals forty-eight (page 5, paragraph 73, "OC-48 and OC-192").

(3) with respect to claim 23:

As shown in figures 1, and 4, Bruckman teaches a system for forming an optical communications ring, comprising:

a first node operable to transmit and receive a first frame at an existing rate, the first frame having a number of occupied time slots equal to N occupied by data,

wherein N is an integer (24a in figure 4);

a second node coupled to the first node through optical fiber to form a bi-directional line switched ring (24b in figure 4, 76 in figure 4).

wherein the first node comprises at least one identifier identifying the occupied time slots of the second frame (page 5, paragraph 69).

However, Bruckman does not teach a bit transmission unit operable to transmit a second frame to the first node at a rate that is higher than the existing rate, the second frame having a higher number of time slots than the first frame; and

a switch unit coupled to the bit transmission unit, the switch unit operable to generate a pattern of data that fills a number of the time slots of the second frame equal to N and to send the pattern of data to the bit transmission unit;

Doi teaches teach a bit transmission unit operable to transmit a second frame to the first node at a rate that is higher than the existing rate, the second frame having a higher number of time slots than the first frame (TP1 in figure 1); and

a switch unit coupled to the bit transmission unit, the switch unit operable to generate a pattern of data that fills a number of the time slots of the second frame equal to N and to send the pattern of data to the bit transmission unit (SW1 in figure 1);

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the switching unit and the transmission unit as taught by Doi in the nodes of Bruckman et al. because it would have made the transmission faster.

(4) with respect to claim 24:

Bruckman teaches the system, wherein the first node is operable to receive the second frame and detect the data in the identified time slots of the second frame according to the at least one identifier (78 and 72 in figure 4, "input 78 shows that the first node can receive the frame", page 5, paragraph 69 refers to the identifier).

6. Claims 17, 20, 25, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman et al. (20040179518) and Doi (20050181831) as applied to claim 16 above, and further in view of Krishnamoorthy et al. (6,625,165).

(1) with respect to claims 17 and 25:

Bruckman et al. and Doi teach all of the subject matter as described above. Bruckman et al. and Doi further teach the node, wherein the switch unit is further operable to fill the payload data group with only the payload data and to fill the redundancy data group with only the redundancy data, except for the node, wherein payload data and redundancy data, and the time slots are categorized into a payload data group and a redundancy data group.

Krishnamoorthy et al. teaches the node, wherein payload data and redundancy data, and the time slots are categorized into a payload data group and a redundancy data group (time slot 1 and time slot 2 in figure 3, column 4, lines 23 - 34).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate payload and redundancy data as taught by Krishnamoorthy et al. in the transmission of the frame of Bruckman et al. and Doi, because it would have made the network more robust.

(2) with respect to claim 20, and 28:

Bruckman et al. and Doi teach all of the subject matter as described above, except for the node, wherein the data is divided into a plurality of categories, and the time slots are divided into a plurality of sections each corresponding to a particular one of the categories.

Krishnamoorthy et al. teaches the node, wherein the data is divided into a plurality of categories, and the time slots are divided into a plurality of sections each corresponding to a particular one of the categories. (time slot #1 and time slot #2 in figure 3, the different sections 315-1, 317-1 in time slot #1, and 315-2, 317-2 in time slot #2).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the different sections and categories as taught by Krishnamoorthy et al. in the transmission of Bruckman et al. because in doing so the network would be more robust.

7. Claims 19, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman et al. (20040179518) and Doi (20050181831) as applied to claim 16 above, and further in view of Dasika et al. (7,016,378).

Bruckman et al. and Doi teach all of the subject matter as described above except for the method, wherein the data transmission rate is approximately 2.5 gigabits per second and the rate is approximately 10 gigabits per second.

Dasika et al. does teach a method, wherein the OC-48 line rate is approximately 2.5 gigabits per second (column 3,lines 2, 3).

Bruckman does teach the method, wherein the second rate is four times the first rate (page 3, paragraph 28) and that the upgrade can be from an OC-48 to OC-192 (page 5, paragraph 73). One skilled in the art would know that the line rate for the OC-192 is four times that of OC48, and that of course, results in approximately 10 gigabits per second for the line rate of the OC-192. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the values for the optical carriers as taught by Dasika et al. in the ring network of Bruckman et al. since it was known in the art that it would produce a faster transmission rate.

8. Claims 21, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman et al. (20040179518) and Doi (20050181831) as applied to claims 16 and 23 above, and further in view of Mori et al. (20040213223).

Bruckman et al. and Doi teach all of the subject matter as described above, except for the node, further comprising a signaling unit coupled to the switch unit, the signaling unit operable to coordinate data frame transmission with the existing nodes using a protocol that aligns with the existing rate.

Mori et al. teaches the node, further comprising a signaling unit coupled to the switch unit, the signaling unit operable to coordinate data frame transmission with the existing nodes using a protocol that aligns with the existing rate (202 and 203 in figure 2).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to couple the signaling unit with the switch unit as taught by Mori et al.

in the node of Bruckman et al. because it would make the transmission cheaper and faster.

9. Claims 22, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman et al. (20040179518) and Doi (20050181831) as applied to claims 16 and 23 above, and further in view of Jurgensen (6,888,853).

(1) with respect to claim 22:

Bruckman et al. and Doi teach all of the subject matter as described above, except for the node, wherein the the bit transmission unit is a laser gun that is operable to transmit a pattern of light pulses that represents the second frame.

Jurgensen teaches the node, wherein the bit transmission unit is a laser gun that is operable to transmit a pattern of light pulses that represents the second frame (figure 4, column 18, lines 27, 31).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to design the bit transmission unit as taught by Jurgensen in the node of Bruckman et al. because it would make the transmission more cost-beneficial.

(2) with respect to claim 30:

Bruckman et al. and Doi teach all of the subject matter as described above, except for the node, wherein the bit transmission unit is a laser gun that is operable to transmit a pattern of light pulses that represents the pattern of data.

Jurgensen teaches the node, wherein the bit transmission unit is a laser gun that is operable to transmit a pattern of light pulses that represents the pattern of data (figure 4, column 18, lines 27, 31).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to design the bit transmission unit as taught by Jurgensen in the node of Bruckman et al. because it would make the transmission more cost-beneficial.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guerssy Azemar whose telephone number is (571)270-1076. The examiner can normally be reached on Mon-Fri (every other Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Liu Shuwang can be reached on (571)272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SHUWANG LIU
SUPERVISORY PATENT EXAMINER

Guerssy Azemar

08/03/2006